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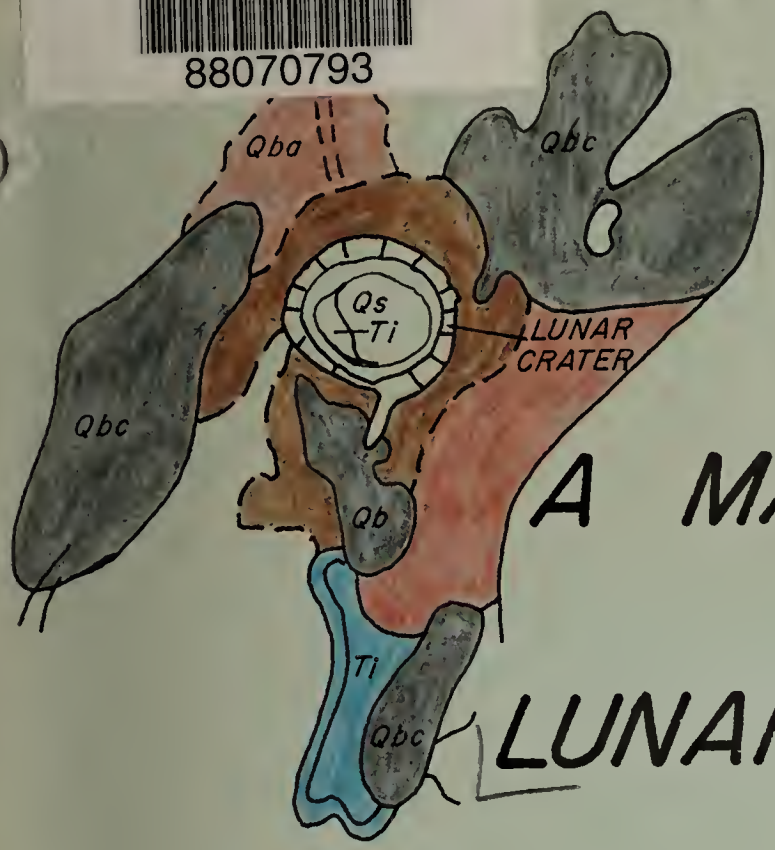
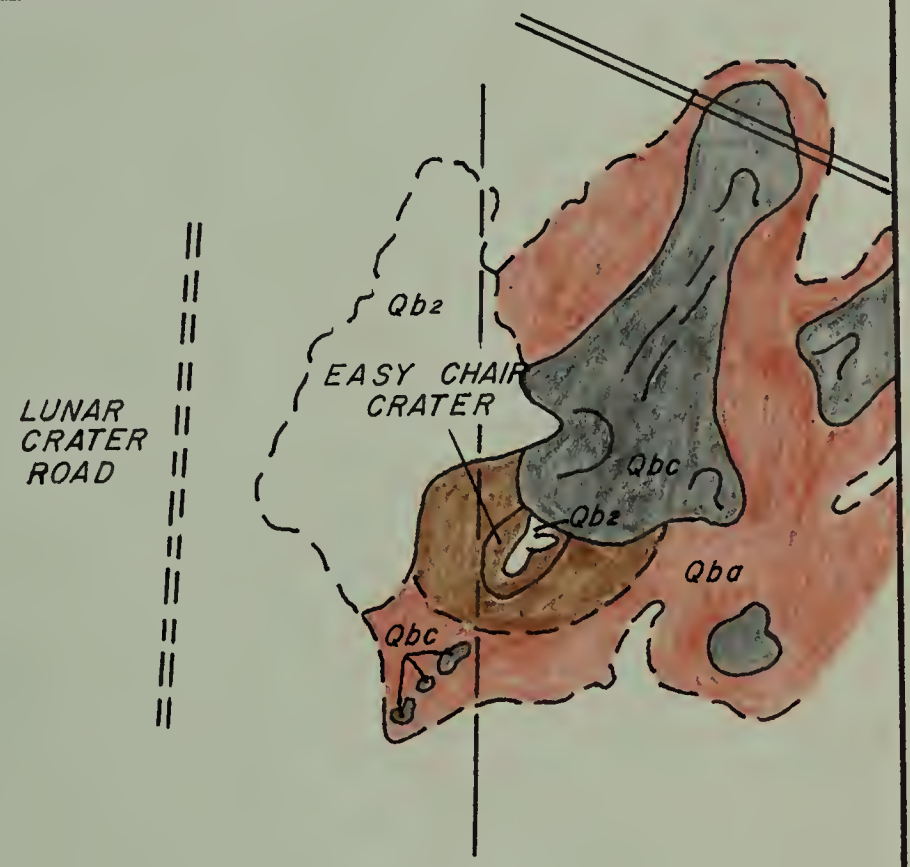
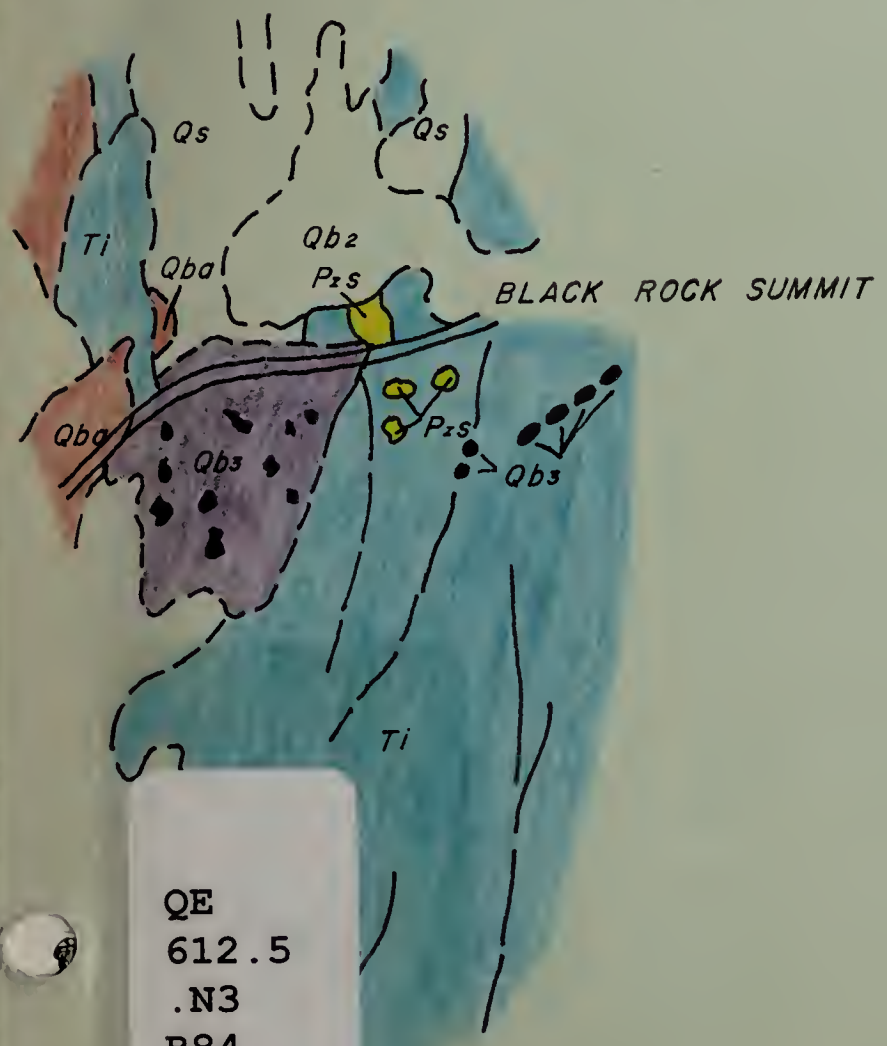


A MANAGEMENT PLAN FOR LUNAR CRATER VOLCANIC FIELD





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BUREAU OF LAND MANAGEMENT
BATTLE MOUNTAIN DISTRICT

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OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

6000
(N-060)

4/25
4/25
HH 4/26

TO : State Director, NV (N-910)

DATE: April 21, 1978

FROM : District Manager, Battle Mountain DO

SUBJECT: Recreation Management Plan for Lunar Crater

R.Y. 5/12

6-19

Enclosed is the finalized Management Plan for the Lunar Crater Volcanic Field. This plan was prepared in accord with the Tonopah MFP Step 3 decision.

As you are aware, the Tonopah MFP had wide public involvement which this area was discussed at length.

We are also sending a summary of this plan to all recreation interests that we are aware of. If you or your staff desire a list of these interests, we will be glad to supply. Also, Mrs. Mason has prepared a slide presentation of this area and plan, and has presented this at some of the clubs in Tonopah.

The EAR is in final preparation stages and will be on file in the District and Area offices.

1 Enclosure
Encl 1 - Management Plan for
Lunar Crater Volcanic Field

cc: Area Manager, Tonopah RA

5010-108

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

#9273204

ID: 88070793

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Amendment to the Lunar Crater RMP
as approved 3/31/78

After observing the visitor use patterns and continuing road conditions of the Lunar Crater Volcanic Field it is my recommendation to amend the RMP in the area of development of the Black Rock Lava Flow interpretive site. It now appears that the location for the interpretive sign, parking facilities, etc. would be better located approximately .8 mi. from the highway turnoff towards Black Rock Lava Flow. Viewing of the feature is still good here but the major advantage is the proximity of the highway. More visitors will use the area because they can see the site. It is also recommended that the establishment of two picnic tables be accomplished here. The suspected increase in visitor use should warrent the need for these. A C.R. clearance will be made prior to the implementation and an addendum to the EAR will also be filed.

Recommended by: Dorothy Mason
Dorothy Mason, Outdoor Rec. Planner

Date: 3/14/79

Approved by: Rex Rowley
Rex Rowley, Tonopah Area Manager

Date: 3-15-79

Concurred by: Gene Nodine
Gene Nodine, Battle Mtn. District Manager

Date: 3/20/79

#927320804 ID:89070793

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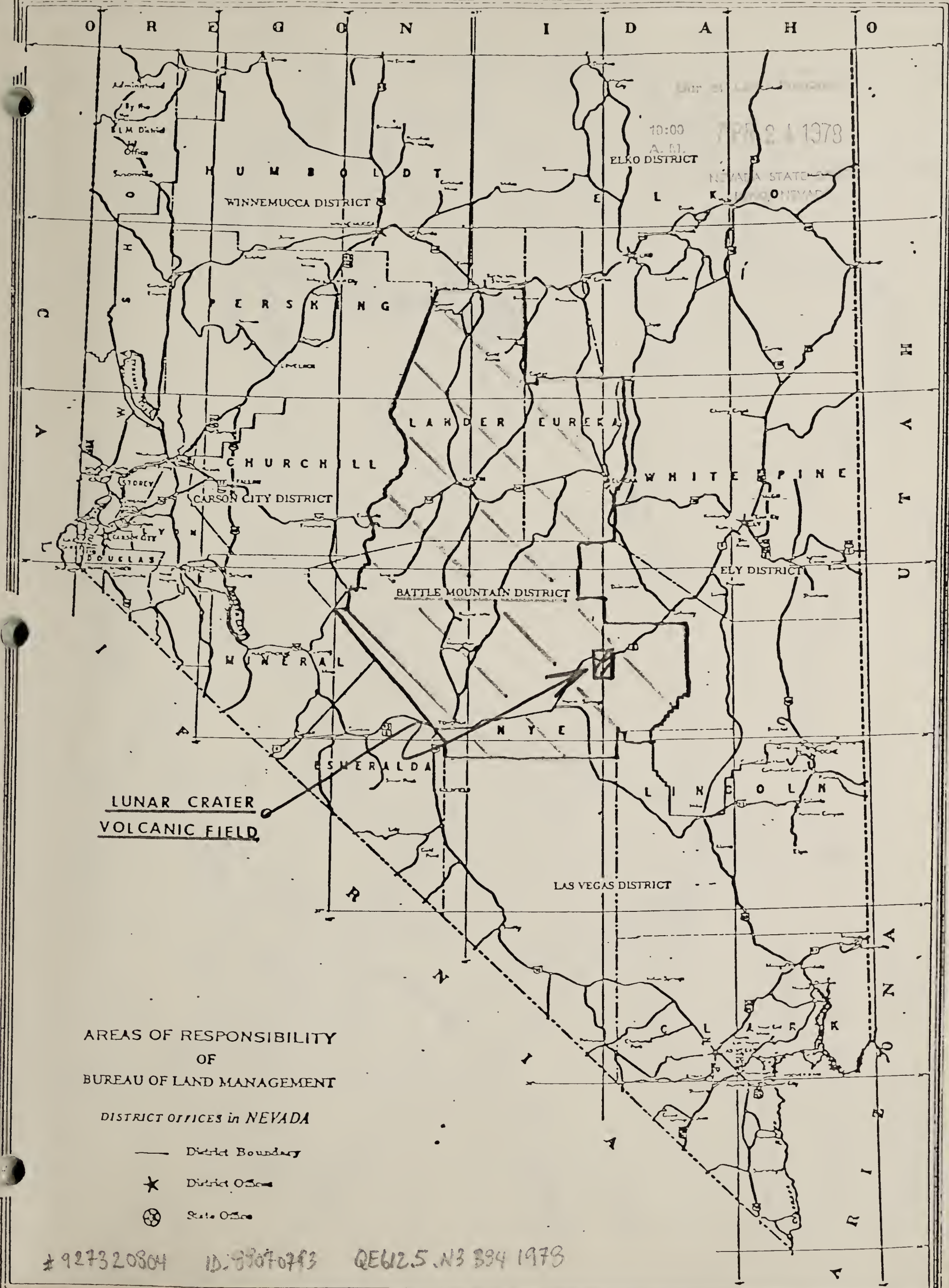
MAP 1



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CONSERVATION

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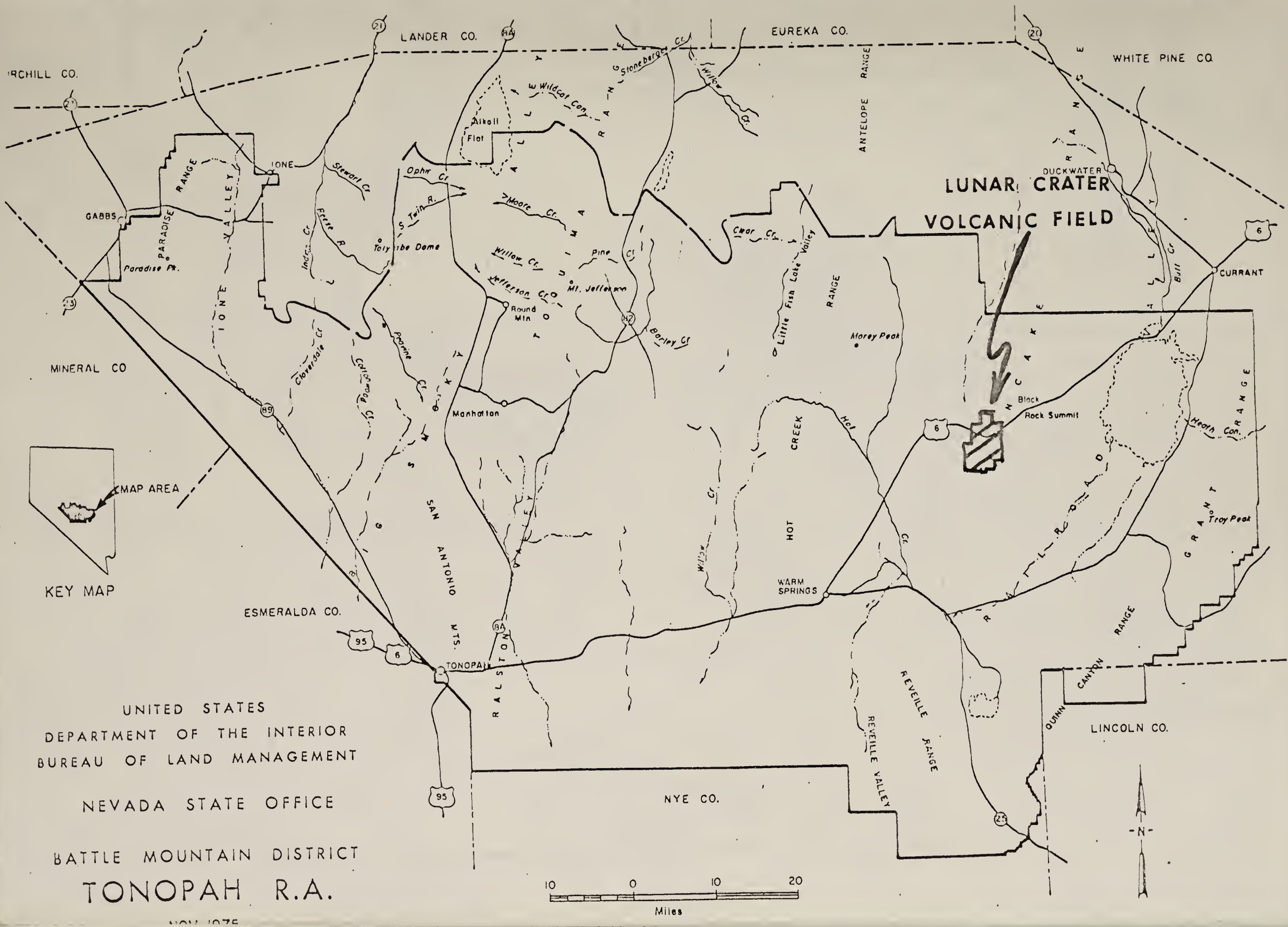

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NEVADA STATE OFFICE

BATTLE MOUNTAIN DISTRICT

TONOPAH R.A.

NOV. 1975

LUNAR CRATER VOLCANIC FIELD

NATIONAL NATURAL LANDMARK

SPRINGS VALLEY

BIG SAND SPRINGS VALLEY

LAVA

LAVA

LAVA

Spring Wash

Borrow Pit

Gravel Pit

Cinder Pits

BM 5783

BM 5773

BM 5885

Easy Chair Crater

Sand Springs

Wash

Lunar Lake

Lunar Lake

Lunar Crater

North Kidney Butte

South Kidney Butte

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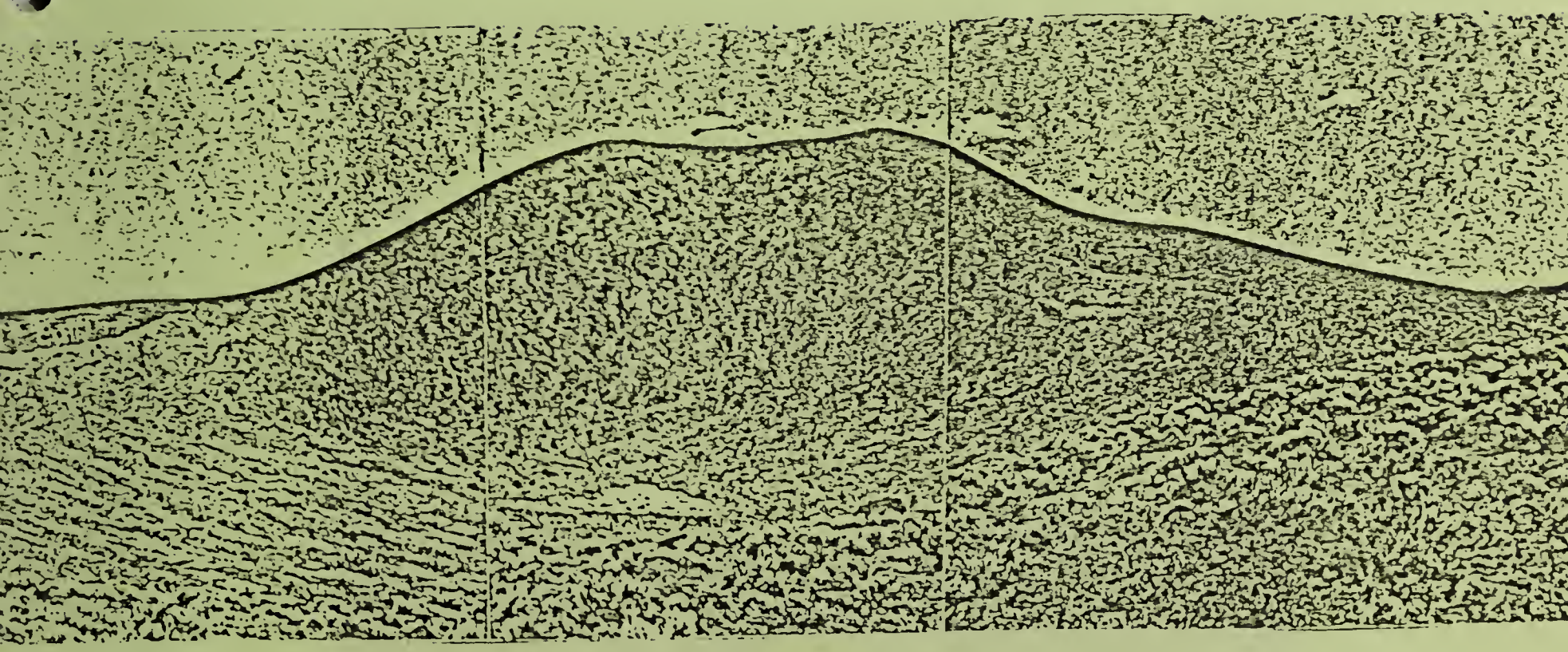
SECTION ONE:

BACKGROUND INFORMATION



I. BACKGROUND INFORMATION

A. Purpose

Lunar Crater has long been recognized as a significant geologic feature by scientists as well as the public. The significance of the surrounding volcanic field is also recognized by scientists, but not as readily by the public. The purpose of this plan is to develop a method for interpretation of the entire volcanic field resulting in increased public awareness of the geologic processes involved here.

We hope to accomplish this by low key development consisting of parking areas, hiking trails, interpretive and directional signing, and by providing a self guiding brochure.

B. Statement of Geologic Significance

The Lunar Crater Volcanic Field is located approximately 70 miles east of Tonopah in Nye County, Nevada on either side of U.S. Highway 6. The field runs north of the highway for about 3 miles and south of the highway about 6 miles. The Lunar Crater Volcanic Field is in the Tonopah Resource Area which is within BLM's Battle Mountain District.

Lunar Crater, probably the most outstanding feature in the field, was nominated and accepted to the National Natural Landmark Register in 1973. The two sections surrounding this feature are closed to ORV use and mineral location.

The Tonopah MFP identifies 11 sections surrounding Easy Chair Crater and Black Rock Lava Flow for nomination to the National Natural Landmark Register. This MFP decision also recommends restriction of all leasing, closure to material sales, and restriction of vehicle use to existing roads within these 11 sections.

The U.S. Geological Survey did a professional paper in 1971 titled, "Geology of the Lunar Crater Volcanic Field, Nye County, Nevada". Other geological articles on the area include: "Ultramafic Xenoliths in basalt, Nye County, Nevada" and "Alkali basalt from Nye County, Nevada".

The Tonopah Resource Area planning document (MFP) recognizes the area's significance. The URA rates the field as an A geologic sightseeing area due to "textbook examples of volcanic features". The area was rated A for primitive values because the "features attract attention and curiosity". The field was also rated as an A scenic area.

The Lunar Crater Volcanic Field is recognized by geologists as a significant geologic type site. It was recommended by the resource area geologist that the field be preserved and interpreted for the public. This suggestion was supported by an MFP recommendation and a District Managers decision.

Finally, the field is significant because it is in close proximity to a major U.S. highway, yet the area is relatively undisturbed and has a remote character.

C. Physical Profile

The Lunar Crater Volcanic Field is in the southern part of the Pancake Range, Nye County, Nevada and is crossed by U.S. Highway 6 about midway between the towns of Ely and Tonopah. Cinder cones, craters, and basalt flows cover an area of more than 100 square miles and represent the latest episode in the long eruptive history of this area.

Elevations range from 5753' near Lunar Lake to 6570' near Easy Chair Crater. The volcanic field is surrounded by the "Wall" on the south and east sides, and Palisade and Halligan Mesas on the west side. The cinder cones, craters, and basalt flows cover the valley floor.

The soils are obviously volcanic in nature. The texture is moderately coarse for most of the area.

Provided with approximately 9 inches of rain per year, the area supports vegetation typical to the "Salt Desert Shrub" zone. Lower elevations in the area are most commonly composed of shadscale, rabbitbrush, galleta grass, halogeton, and globemallow. There is some winterfat and budsage available here also. Higher elevations on the east side of the field, support black sage, big sage, Mormon tea, rabbitbrush, Indian ricegrass, squirreltail, and globemallow.

There is no natural yearlong water in the area. There is a Sandy Summit spring to the west in the Palasade Mesa and there are springs on the east side of the Wall in Railroad Valley called Coyote Hole Spring, Storm Spring and Abel Spring. There is a reservoir on the south end of Lunar Lake and the lake itself collects some runoff. The livestock operator hauls water into the area during the winter months. Generally, however, water is very scarce and undependable within the Lunar Crater Volcanic Field.

This lack of water limits the wildlife variety. There are a few pronghorn antelope in the area and they can be viewed at times, particularly on the east side of the area near the Wall. Rocky mountain mule deer are present in the Pancake Range to the north but none have been sighted in the volcanic field. Other mammals present include coyotes, kit foxes, blacktailed jackrabbits, possibly desert cottontails, badgers, antelope ground squirrels and other small rodents. The birds list for the area includes golden eagles, praire falcons, ravens, redtailed hawks, chukars, horned larks, loggerheaded shrikes and others. The reptiles are represented by the Great Basin rattler, the red racer, horned toads, leopard lizards and other.

D. Visitor Use Information

Recreational use of the volcanic field is currently felt to be from low to moderate. The highway sign which says "Lunar Crater 7 miles" makes the area known to the casual passer by.

The Nevada Highway Department has a portable traffic recording station northeast of the AEC Base Camp on Highway 6, which is about 16 miles southwest of the turnoff to Lunar Crater. The data is collected on a seasonal basis. This particular station was monitored in January, June and August during 1976. The following table indicates the average daily traffic at station 230076:

1972	145
1973	130
1974	145
1975	145
1976	145

The highway department indicates that approximately 15% of this traffic is composed of Nevada vehicles, 60% out of state vehicles and 25% commerical vehicles.

A BLM traffic counter was established on the road to Lunar Crater in August of 1977. The average daily traffic going to Lunar Crater computed for August through October of 1977 is 2.9 or roughly 3 vehicles. This means roughly 2% of the vehicles using Highway

6 stop or drive down the road to Lunar Crater.

Over one half of the vehicles traveling down Highway 6 are from out of state and may be vacationers. These people are taking the time to drive the seven miles to Lunar Crater. It is estimated that if an attractive entry sign were placed at the highway intersection, that possibly up to 5% of the travelers using Highway 6 would stop. This estimate is based on the fact that the Nevada State Park System estimates 5% of the vehicles using the highway stop at their roadside interpretive markers. It is expected that a BLM sign would arouse at least equal curiosity.

A visitor roster box at the crater has been established to help determine how many people actually visit the crater. The sign in sheet at the box indicated that a good number and variety of visitors have been out to the crater. Seventy-eight people signed in over a 2 1/2 month period. The 2 1/2 months sampled was during the winter and holiday season. About half of the visitors were Nevada residents, over half were from out of the state with 4 people being from out the the United States. These people were from Canada, Spain, Switzerland and West Germany. Comments ranged from: "Good

example of a geologic disturbance", "outstanding", "well worth the drive up!", to "seen better", and "o.k.". A variety of visitors have also been observed on and near the Black Rock Lava Flow at different times of the year.

Current visitor days per year to the volcanic field is estimated at 600.

E. Visual Resources

Visual resources are very important to this area. The sections around Lunar Crater are Class II (high) and in the surrounding area the Class is III (moderate).

The volcanic field offers a wide open view of numerous basalt flows, cinder cones and craters in a high valley. The view is relatively unobstructed by man made intrusions except the highway and the livestock water tank.

The Bureau's Recreation Information System rates this area excellent for scenery.

F. Other Resources

The lands are in Sand Springs and Crater Black Rock Allotments. Sand Springs is grazed by sheep and cattle. Use in Sand Springs is from November through March and periodically into April. Crater Black Rock is used by cattle only and this use occurs from November to April.

Because the Lunar Crater area is lacking in natural water the operator must use large storage tanks and troughs and haul water to the area.

G. Agency Involvement

1. BLM

The Bureau is the major land management agency in the area. The Bureau's planning system has identified opportunities for retention, protection and interpretation of the geological features within the volcanic field.

There is currently a large redwood interpretive sign at Lunar Crater which was established by BLM in 1976.

2. Nye County

The Nye County road maintenance crew currently has the responsibilities for maintaining the main road to Lunar Crater.

H. Adverse Actions

There are a few adverse impacts on the land that may deter from enjoyment of the geologic features. These impacts do not however, dominate the landscape.

- Livestock Management Activities

1. The road that goes into the crater will be used during the winter months for temporary water hauling. There are 2 other permanent water tanks in the vicinity of the recreation area but they are not readily observable.
2. There is a livestock reservior on the south end of Lunar Lake near the road but it too is not readily observable.
3. A blade line was dozed along the Stormy-Abel Fence, located in the southeast portion of the area, and this blade line is clearly visable along the road between Lunar Crater and the Wall.
4. There are two old corrals within the recreation area. They are apparently no longer in use. One is northeast of Easy Chair Crater the other is near "The Wall" interpretive site east of the Lunar Crater, (see map of Adverse Impacts for locations).

- Off Road Vehicle Use

Very little of this has occurred here. However, someone has taken a vehicle off the road and up to the lip of Easy Chair Crater.

There is currently a jeep road on the east lip of Lunar Crater. Continued use of it could lead to erosion of the lip and/or possibly entice further ORV use of other parts of the crater.

There are two old roads that go up to the gap fence and stop at the Wall. They are very short and in bad condition. There is no break in the fence so the roads are no longer used.

- Other Problems

There is currently a problem with access where the Lunar Crater loop road comes back to Highway 6 north of Lunar Lake. The road comes into a part of the old highway and although only a short distance from the current highway, access appears confusing.

I. Lands and Minerals

The entire volcanic field lies on public lands. Portions of 4 sections surrounding Lunar Crater are withdrawn from all forms of appropriation under the public land laws including general mining laws but not the Recreation and Public Purposes Act or mineral leasing and material sales. Eleven more sections surrounding Easy Chair Crater and Black Rock Lava Flow were identified in the Tonopah MFP for restriction of all leasing and closure to material sales. Mineral exploration will still be allowed.

1. Material Sites

There are currently four material site rights-of-way in or near the volcanic field. All of them are near the highway. It appears that possibly two of them are active with the other two apparently inactive. Use of one of these sites (the one to the west of the highway entrance) could conflict with recreational use. This one currently appears inactive.

2. Oil and Gas Leases

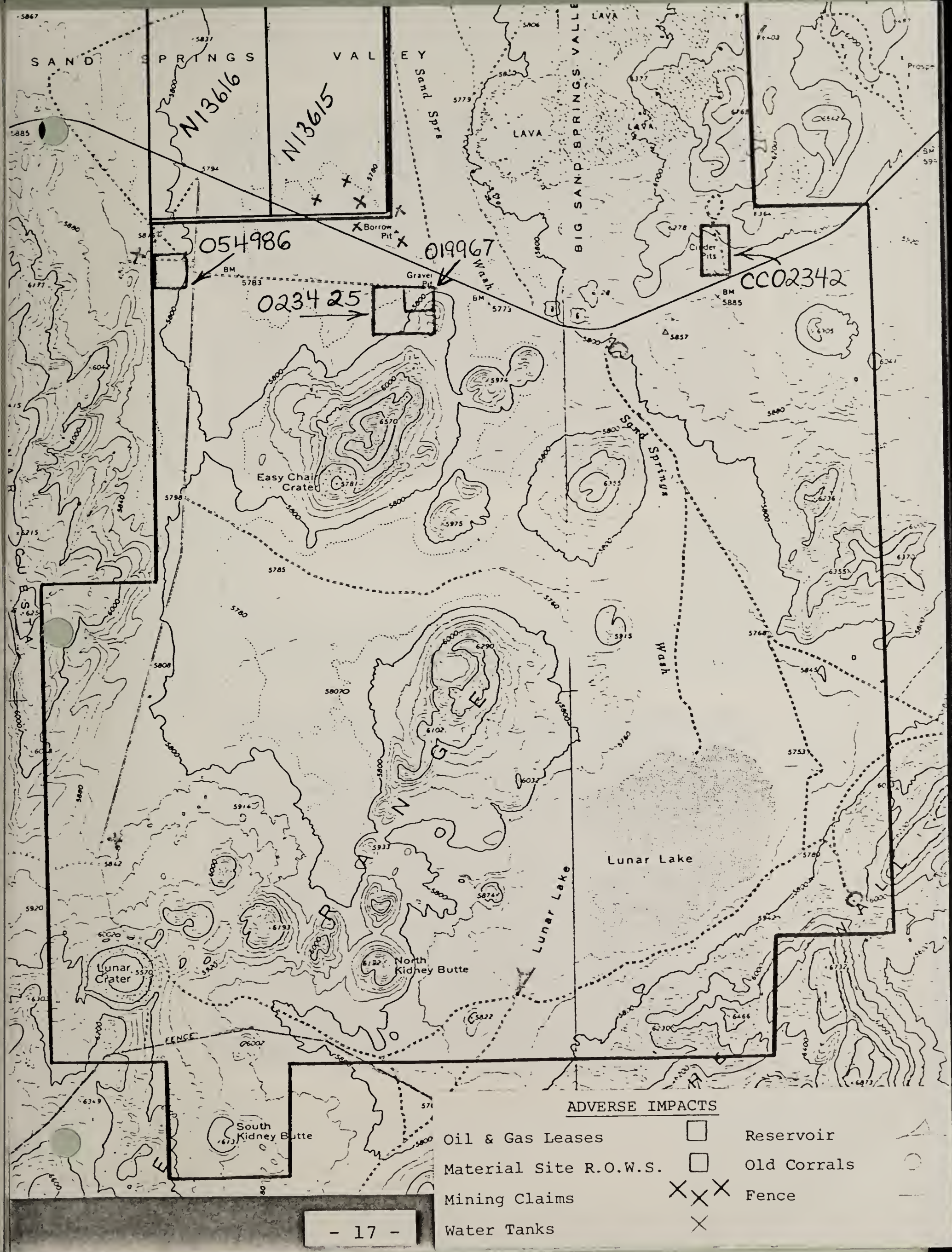
Dome Petroleum Corporation has applied (lease #N13615) for an oil and gas lease in 4 sections near the recreation area (T. 7N., R. 53E., Sec.'s

4, 5, 8 & 9). Sections 5 and 8 were issued, sections 4 and 9 were suspended until further study of the area has been made for National Natural Landmark Designation. In lease application number N13616 they applied for sections 6 and 7 and these were also issued. The leases are good from April 1, 1977 to March 30, 1986.

3. Mining Claims

Since the area surrounding the volcanic field has not been surveyed, Nye County has no maps in their files indicating claim locations. Ground inspection of the area revealed several (7) mining claim posts north of the highway and west of the Black Rock Lava Flow. None of these posts had any information as to the owner, claim name or what was being claimed. The resource area geologist suspected that the claims were for cinder gravel and they were probably claimed after 1947. If this is the case they are invalid because the Material Act of 1947, amended in 1955 and 1962. This act gives us the authority to dispose of such mineral materials as cinder by sale.

At any rate, if the claims are not recorded with BLM by October of 1979 they will be invalid because of the Federal Land Policy & Management


SAND SPRINGS VALLEY
N13616
N13615
Sand Spr
LAVA
LAVA
BIG SAND SPRINGS VALLE
Borrow Pit
054986
019967
Gravel Pit
023425
Wash
BM 5783
BM 5773
Cinder Pits
CC02342
BM 5885
Easy Chair Crater
Sand Springs
Wash
Lunar Lake
Lunar Lake
Lunar Crater
North Kidney Butte
South Kidney Butte
FENCE
ADVERSE IMPACTS
Oil & Gas Leases
Material Site R.O.W.S.
Mining Claims
Water Tanks
Reservoir
Old Corrals
Fence

Material Site R.O.W.
#054986

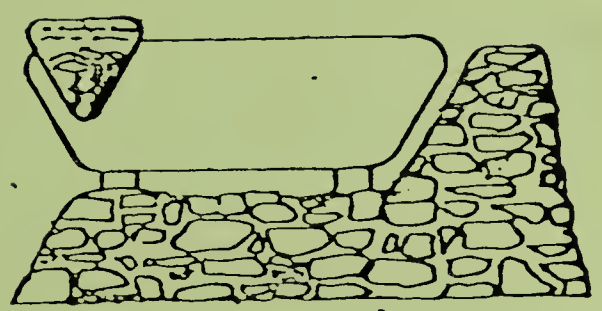
Material Site R.O.W.
#CC02342

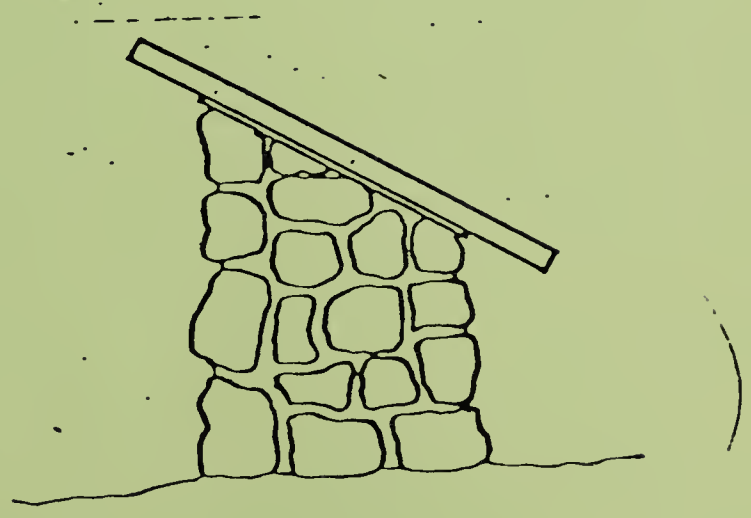
Temporary water
hauling tank near
LUNAR CRATER

Old corrals at THE WALL and
near the highway.

SECTION TWO:

RECOMMENDATIONS





II. RECOMMENDATIONS

A. Objectives

1. Management Actions

a. Preserve the integrity of the geologic features and the surrounding area for its continued enjoyment of future generations.

b. Provide for adequate, safe access to the geologic features for good viewing by the public.

c. Provide a stopping place for visitors that may wish to stay in the area longer than one day.

2. Interpretation

a. Provide the public with an interpretation of the individual features to enhance their understanding of the geologic processes involved.

B. Constraints

1. The area is remote making it difficult to patrol for vandalism of the improvements and violation of ORV rules.

2. Recreation use will be mostly transient. The area will not be a destination for most recreationists. Many highway users do not have the time or the inclination to walk long distances from their vehicles. Interpretation within 300' or less of parking is required.

3. Providing a rest stop, campground, picnic ground etc. would invite vandalism. Garbage pickup, toilet cleaning and facility maintenance would also be problems. Current visitor use information and the expense of operating such facilities seem prohibitive of such development right away.

4. By adding an attractive entrance sign and interior interpretive signs, visitor use may significantly increase. This increased use may cause problems with parking near features.

C. Recommendations

- Management Actions

1. To protect the integrity of the features and the surrounding area for its continued enjoyment of future generations:

   a. By nominating the Volcanic Field for the National Natural Landmark Designation.

   b. By locating trash cans at strategic locations within the area, and emptying them periodically.

   c. By removing the old corrals that are no longer needed.

   d. By getting the county to relinguish at least the one material site right-of-way that could conflict with use of the area.

   e. By closing the road on the east lip of Lunar Crater by blocking it off with large rocks.

   f. By blocking off the two old roads that go up to the Wall.

   g. By blocking off the parking area at Easy Chair Crater so vehicles can't go up to the lip any more.

h. By restricting all leasing, closing to material sales, and restricting vehicle use to existing roads within the 11 sections surrounding Easy Chair Crater and Black Rock Lava Flow as identified within the Tonopah MFP. This information should be added to the update of the oil and gas EAR to be accomplished in the spring of 1978.

i. By denial of the pending oil and gas lease #N13615 for sections 4 and 9 due to the recommendation for nominating the area to National Natural Landmark Designation.

2. To provide for adequate access to the geologic features for good viewing by the public:

   a. By periodically maintaining existing BLM roads.

   b. By adding two short roads to the transportation plan. (The road to Easy Chair and the Wall.)

   c. By improving the access on to the highway where the Lunar Crater loop road comes back to Highway 6 north of Lunar Lake.

d. By seeing that the main road into Lunar Crater is maintained by the county or by adding it to the BLM transportation plan.

e. By constructing three short hiking trails to enhance viewing of particular features (at Easy Chair Crater, Lunar Crater and the Wall).

f. By enlarging a parking area at Lunar Crater, Easy Chair Crater, the Wall and Black Rock Lava Flow to improve parking.

g. By installing directional signs at stategic points to facilitate the visitors to each interpretive site (see maps for locations).

3. To establish an area to be designated for "dry camping" and eventually develop the site for a campground when visitors per year reaches 2,500:

   a. By establishing pit toilets, gravel parking pads, garbage cans, fire pits, and picnic tables.

   b. By monitoring the changes in visitor use

as development takes place through the use of a traffic counter and visitor roster boxes at each of the interpretive signs.

- Interpretation

1. To interpret the individual features for greater understanding of the geologic processes involved.

   a. By establishing interpretive signs for the features (Easy Chair Crater, Black Rock Lava Flow & The Wall) which describe the processes in detail.

   b. By updating the interpretive sign at Lunar Crater.

   c. By developing a simple brochure which provides a map of the area and informs the public about safety and clean up as well as a background on the geology, wildlife, range management and archaeology in the area.

D. Support Needs

1. The resource area archaeologist should inventory the entire volcanic field for cultural resources to determine any conflicts. He should specifically clear the sites for the interpretive signs, hiking trails and possible campground.

2. Assistance from the Shoshone-Eureka Resource Area geologist is needed in designing and developing the interpretives messages for the signs.

3. Construction of the hiking trails, interpretive displays, additional visitor roster boxes, directional signs, and a possible camping area can be done by either the force account crew, fire crew, the USFS NYACC crew, or by contract.

4. Assistance from the new Tonopah or Shoshone Resource Area geologist in getting relinquishment of the material sites from the highway department.

5. Removal of the corrals will require help from the force account crew, the fire crew or the USFS NYACC crew.

6. Help from NSO will be needed in printing the brochure as well as design of the campground if and when it is done.

E. Signatures

Prepared by: Dorothy Mason — 2/16/78
Dorothy Mason — Date
Outdoor Recreation Planner

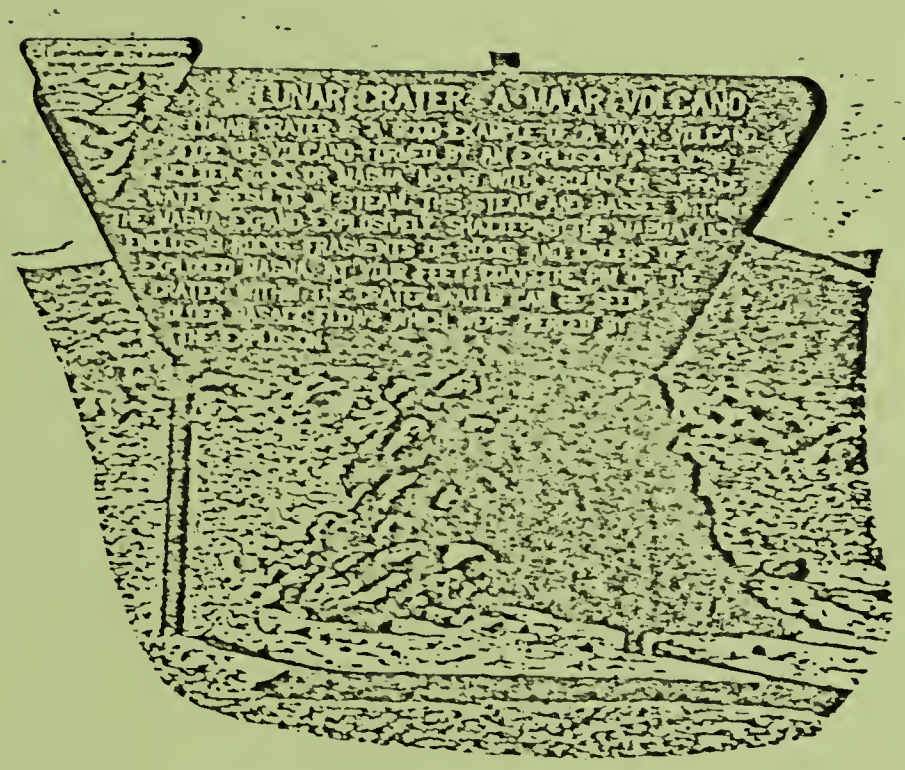
Reviewed by: Bruce E. Giampaoli — 2-28-78
Bruce Giampaoli — Date
Outdoor Recreation Planner

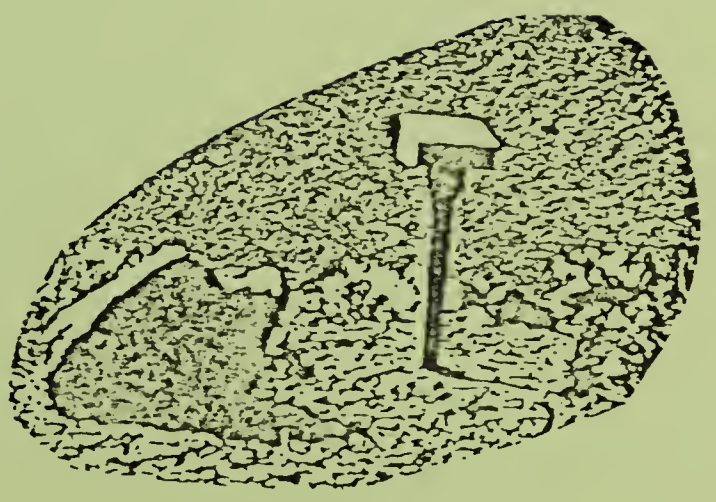
Approved by: Rex Rowley — 2-22-78
Rex Rowley — Date
Tonopah Area Manager

Approved by: Gene Nodine — 3/31/78
Gene Nodine — Date
District Manager

SECTION THREE:

MANAGEMENT ACTIONS





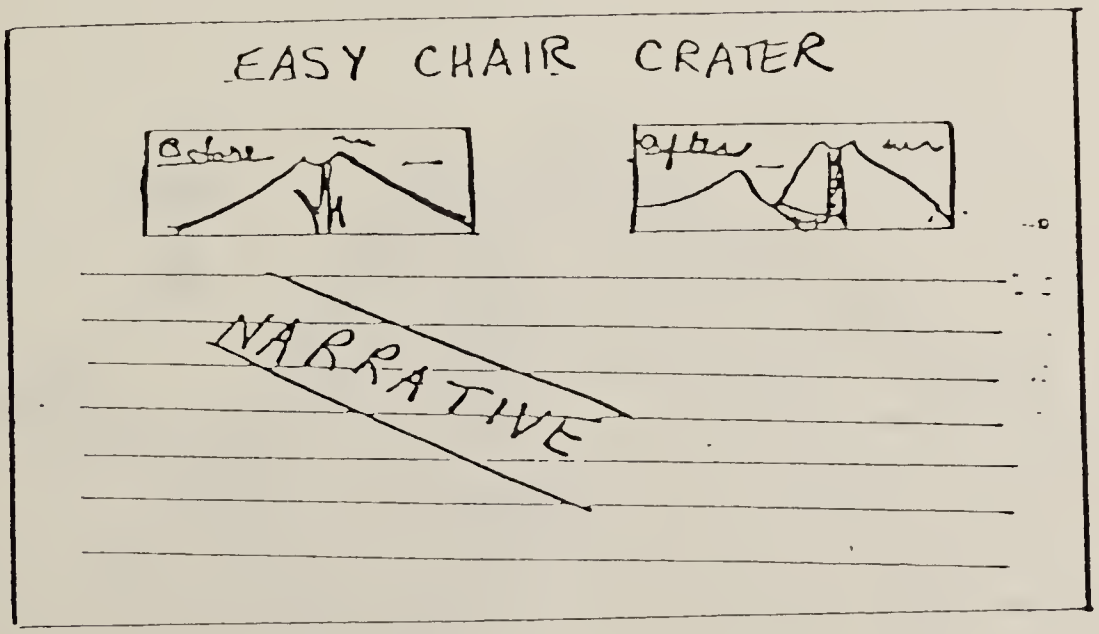
III. MANAGEMENT ACTIONS

A. Interpretive Sign Narratives and Sign Requisitions

EASY CHAIR CRATER

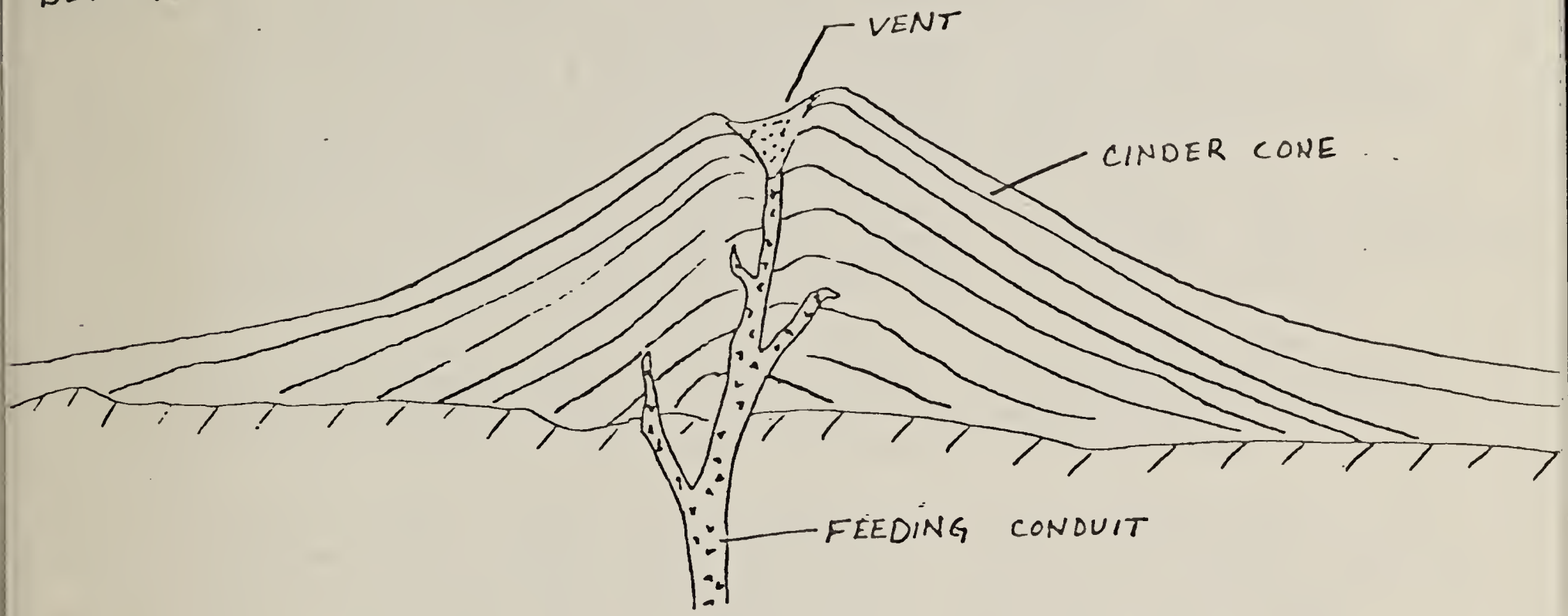
Deep beneath the surface of the Earth, tremendous heat and pressure keep the materials of the Earth's crust in a molten liquid form called magma. Sometimes magma is squeezed upward through cracks in the crust. Where the crust is weak, magma may burst through the surface as flows of liquid lava - or, if pressures are extreme, as violent eruptions of hot gases and debris.

A series of such explosions have deposited volcanic cinders and ash to form a cone around the opening, or vent. Lava then flowed westward from the cone before cooling and can be seen over the left rim. Later, rapid release of gases from magma trapped below generated pressures so intense that sudden and vigorous explosions blew a hole in the side of the cone - creating a maar crater we call Easy Chair Crater. The older deposits of the cinder cone can be seen in the inner walls of the crater as the darker colored ledges nearest the crater floor. The lighter colored rock above is the material that was thrown out of the hole during the explosions. The bare soil near the crater bottom is sediment that has washed down over the years.

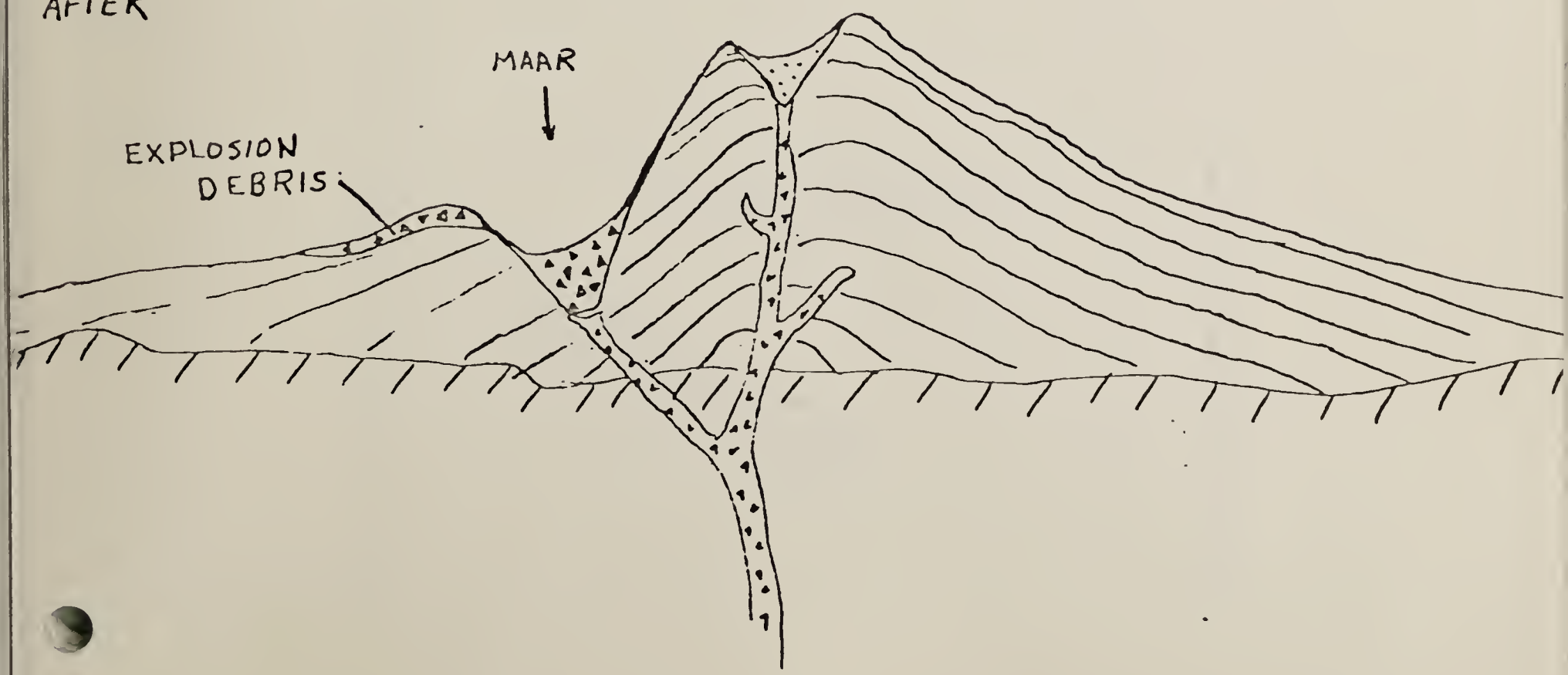


EASY CHAIR CRATER

BEFORE



AFTER

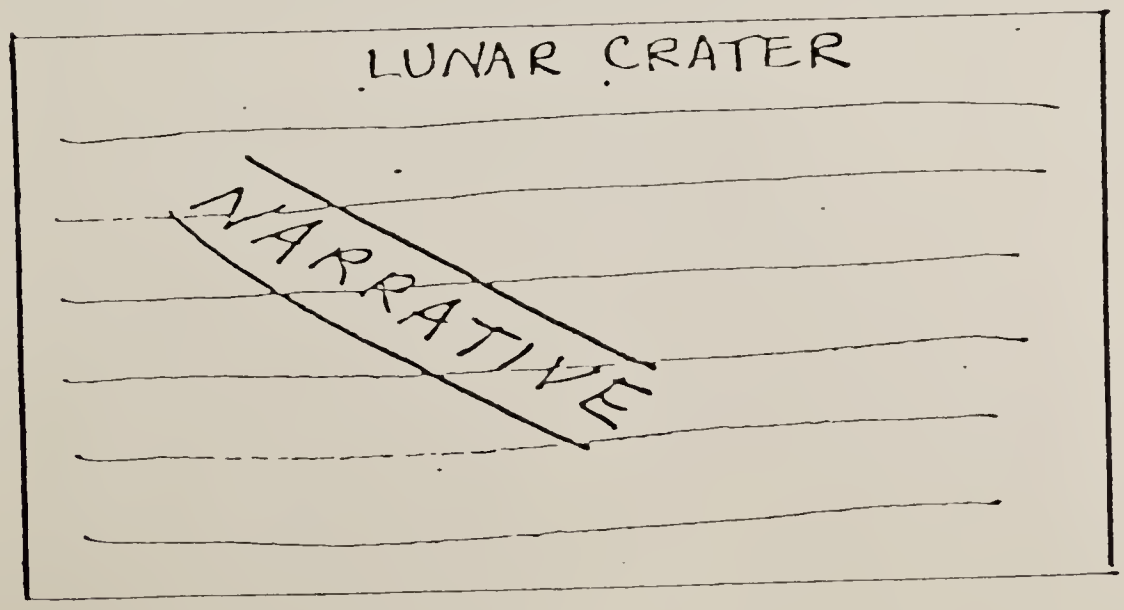


LUNAR CRATER

Lunar Crater lies in a large volcanic field consisting of numerous cinder cones, lava flows and maars. Volcanic activity in this field probably began 26 million years ago and continued to 3 million years ago. Nearly every volcano begins its active life by jetting hot gases that ream a hole in the surface. At high temperatures gases have a tendency to expand, creating intensive pressure. The release of these gases under pressure may be abrupt and violent, causing explosions of terrific energy - sometimes intensified by explosive vaporization of ground water near the surface.

A crater such as Lunar Crater, which results from gaseous explosions is called a maar - an abrupt deep crater with a low rim formed of blasted, pulvarized rock. Unlike a cone, little or no magma is ejected with the gases.

Opposite the crater is the peak of a small cinder cone. The crater rim is made up of the material that was thrown out of the hole during the explosions. Look for the dark colored bands and the lighter cliffs in the walls of the crater. These are old solidified lava flows and ash flows which were torn and exposed by the violence of the explosions.

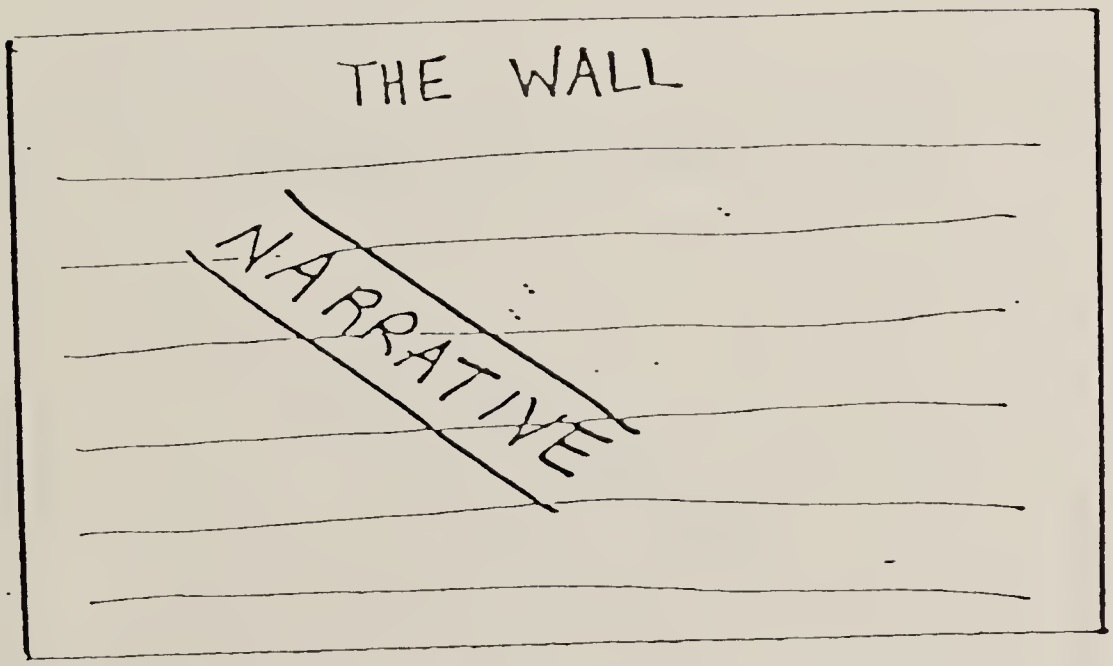


THE WALL

The Wall is a remnant of ancient volcanic activity. Clouds of glowing gases, mixed with volcanic ash and larger fragments of partially solidified magma, were spewed into the air- and then rushed down the volcano's sides in great, hot avalanches.

Turbulent flow, propelled by expansion of the hot gases, drove the fiery mases miles from their source. As movement ceased, heat trapped in the core of the flow fused the ash into rock. Geologists call this rock "welded tuff".

Erosion has since cut through the old flow, revealing its layers of volcanic deposits. In the cliffs before you the more resistant welded zones are represented by the dark colored ledges at the top and below your feet.

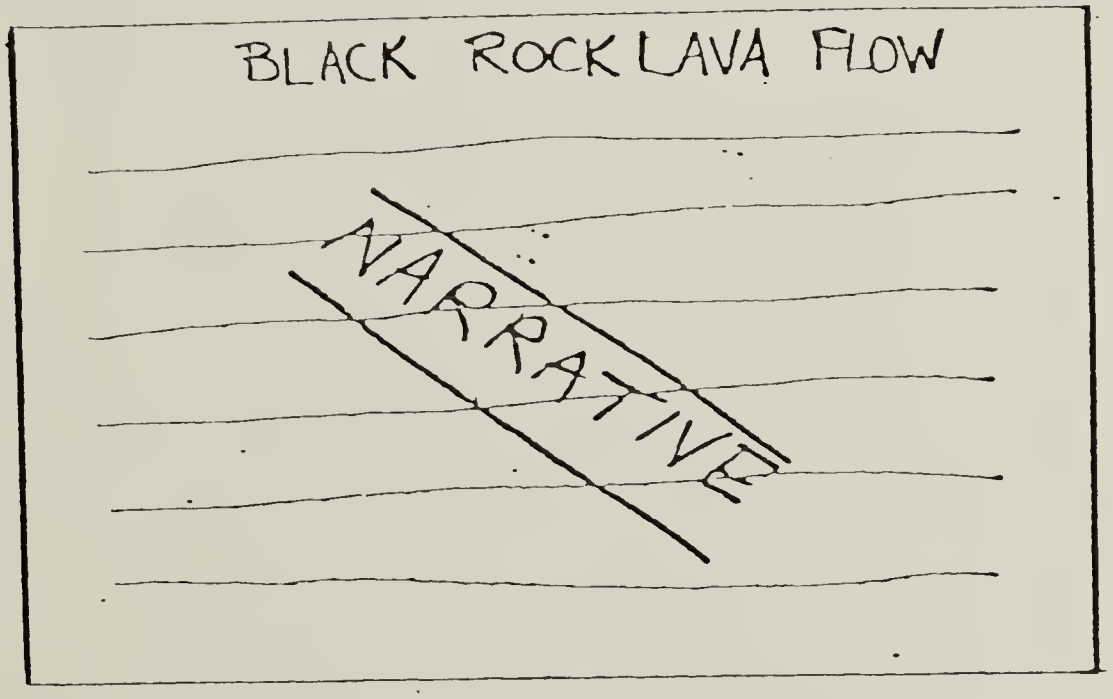


BLACK ROCK LAVA FLOW

The products of volcanoes are gases, solids, and liquids. Explosive releases of heat and pressure from beneath the Earth's crust blow out clouds of gases, ash, and magma which may solidify in the air before raining back to the surface. These violent kinds of eruptions create dramatic land forms such as Lunar Crater and Easy Chair Crater with its associated cinder cone. The volcanic cone on the horizen is of such tumultuous origins.

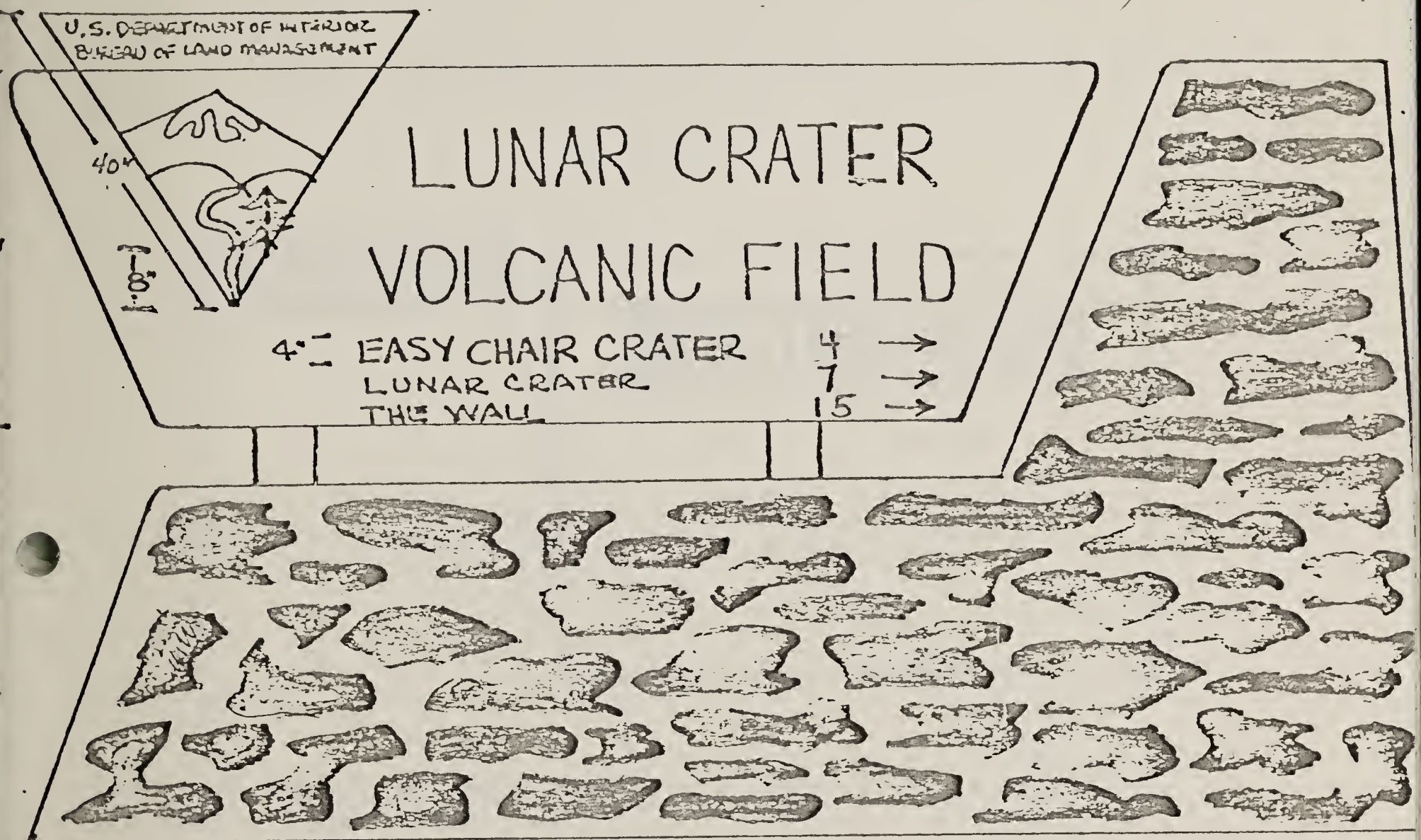
Black Rock Lava Flow, however, is evidence of a quieter eruption in which hot magma swelled up inside the cinder cone. The weak cone walls, unable to support the bubbling, molten rock, broke through and allowed the scorching liquid lava to flow sluggishly toward the west. As the lava cooled, it solidified to form the porous black rock we see here. Black Rock Lava Flow is the youngest of the lava flows in the Lunar Crater Volcanic field.

Close inspection of the lava reveals fragments of foreign rocks and crystals picked up when the magma was still deep within the Earth.



B. Sign Designs

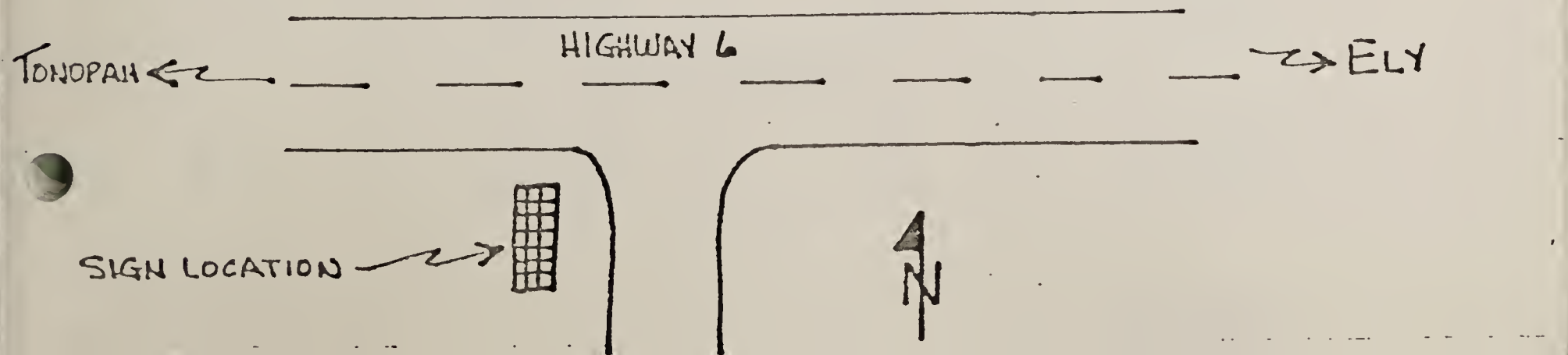
12'



9131 - STANDARDS AND SPECIFICATIONS (.24)

REDWOOD SIGN WITH ROUTED LETTERS @ 55 M.P.H. - DOUBLE FACED

FOUNDATION AND SUPPORT TO BE BUILT TO STATE STANDARS - NATIVE ROCK



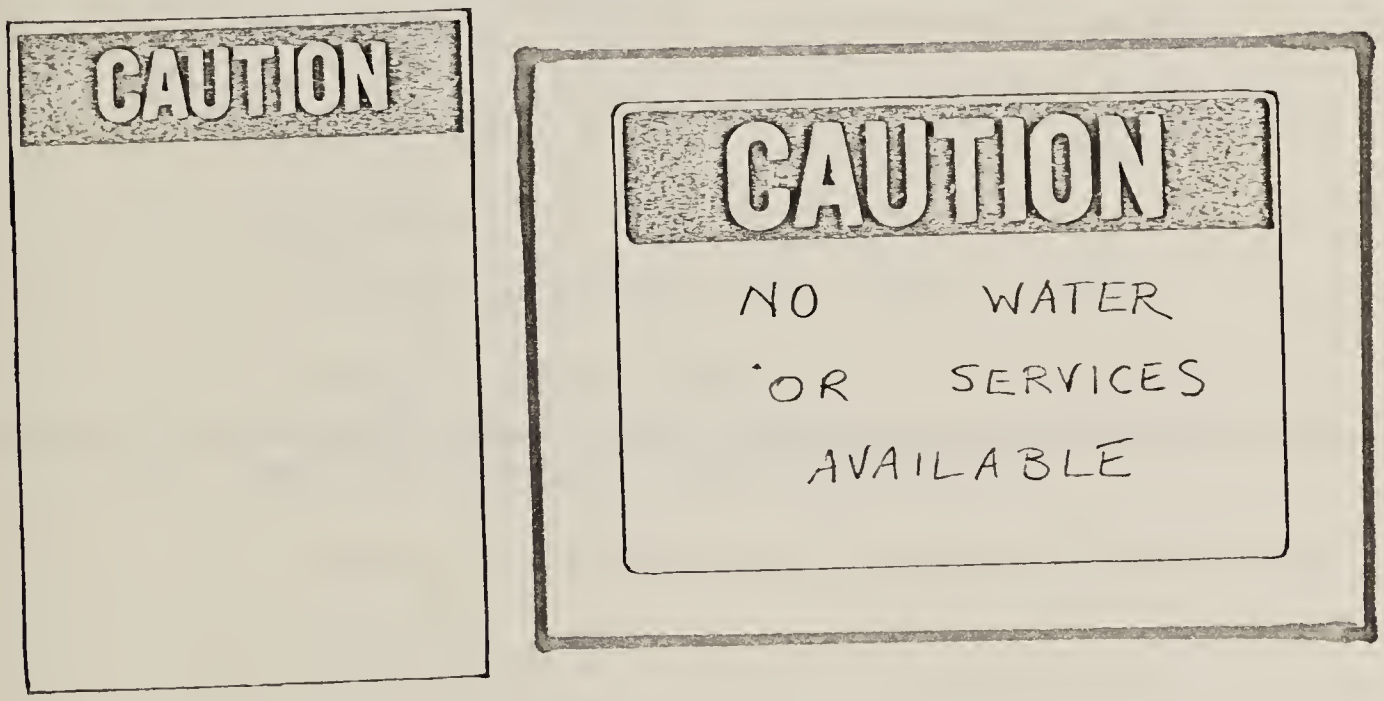
9135 - SAFETY SIGNS AND POSTERS

.12 Caution Signs. These are signs or posters which warn or caution against unsafe practices. There must be no deviation in the type of design specified.

A. Design.

1. Shape. Rectangular with blunt or rounded corners, as shown in Figure 2.

Fig. 2 - Caution Signs



2. Size. The proportions of each sign must be in accordance with Table 2, shown below.

Table 2. Standard Proportions CAUTION SIGNS

Sign Size Inches Height Width	Black Rectangular Panel, Inches Height Width	Word "Caution" Height of Letter Inches	Max. Space Available for Sign Wording Below Panel Inches Height Width
HORIZONTAL PATTERN			
7 x 10	2 1/4 x 9 3/8	1 5/8	3 1/4 x 9 3/8
10 x 14	3 1/4 x 13 3/8	2 1/4	5 1/2 x 13 3/8
14 x 20	3 3/4 x 19 3/8	2 3/4	9 x 19 3/8
20 x 28	4 1/4 x 27 3/8	3 1/4	14 1/2 x 27 3/8
UPRIGHT PATTERN			
10 x 7	1 5/8 x 6 3/8	1 1/8	7 x 6 3/8
14 x 10	2 1/4 x 9 3/8	1 5/8	10 1/2 x 9 3/8
20 x 14	3 1/4 x 13 3/8	2 1/4	15 1/2 x 13 3/8
28 x 20	3 3/4 x 19 3/8	2 3/4	24 x 19 3/8

a. When conditions warrant the use of a sign not covered in Table 2, the ratio of the depth of the identifying panel (Caution) to the width of the sign is 1:3.

3. Colors.

a. Background - yellow.

b. Panel - black rectangular at the top of the sign.

c. Wording:

(1) Caution - yellow letters on black panel.

(2) Message - black letters on yellow background.

4. Lettering.

a. Wording - (Caution, etc.) same as .11A4a.

b. Message - (See .11A4b)

5. Sample Messages (All capital letters):

a. Goggles Must Be Worn When Operating This Machine.

b. Watch Your Step.

c. Close Clearance.

d. Keep Aisles Clear.

e. This Door Must Be Kept Closed.

f. This Space Must Be Kept Clear At All Times.

g. Do Not Operate, Men Working On Line.

h. Hands Off Switch, Man Working On Line.

i. Working On Machines, Do Not Start.

j. Stop Machinery To Clean, Oil, or Repair.

k. Operators Of This Machine Shall Wear Snug-Fitting Clothing - No Gloves.

l. Electric Fence.

6. Material. (Same as .11A6)

C. Other Actions

Upon meeting with Nye County Highway Department be advised that the road from the highway to Lunar Crater is a BLM road. Nye County does not and will not maintain this road.

FIRE MANAGEMENT

The fire hazard in the vicinity of the recreation area may increase slightly due to increased visitor use. However, this will probably be very slight because the fuel load in the area is light and there are numerous natural fire breaks within the field such as; lava flows and cinder areas with little or no vegetation on them, drainages and a large alkali playa. A special message concerning fire safety will be included within the brochure about the area. This will probably be available within the next fiscal year after the interpretive signs are installed and should help accomodate the increased visitor use and their awareness of fire safety.

If a fire did occur in the area it would be necessary for the fire control crew to obtain authorization from either the Tonopah Resource Area Manager or the Battle Mountain District Manager to use heavy equipment for fire suppression.

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LUNAR CRATER, A MAAR VOLCANO
LUNAR CRATER IS A GOOD EXAMPLE OF A MAAR VOLCANO, A TYPE OF VOLCANO FORMED BY AN EXPLOSION. ASCENDING MOLTEN ROCK, OR MAGMA, MIXING WITH GROUND OR SURFACE WATER RESULTS IN STEAM. THIS STEAM AND GASSES WITHIN THE MAGMA EXPAND EXPLOSIVELY, SHATTERING THE MAGMA AND ENCLOSING ROCKS. FRAGMENTS OF ROCKS AND CINDERS OF EXPLODED MAGMA, AT YOUR FEET, COAT THE RIM OF THE CRATER. WITHIN THE CRATER WALLS CAN BE SEEN OLDER BASALT FLOWS WHICH WERE PIERCED BY THE EXPLOSION.

Existing facilities at
LUNAR CRATER

MANAGEMENT ACTIONS

Restricted Areas

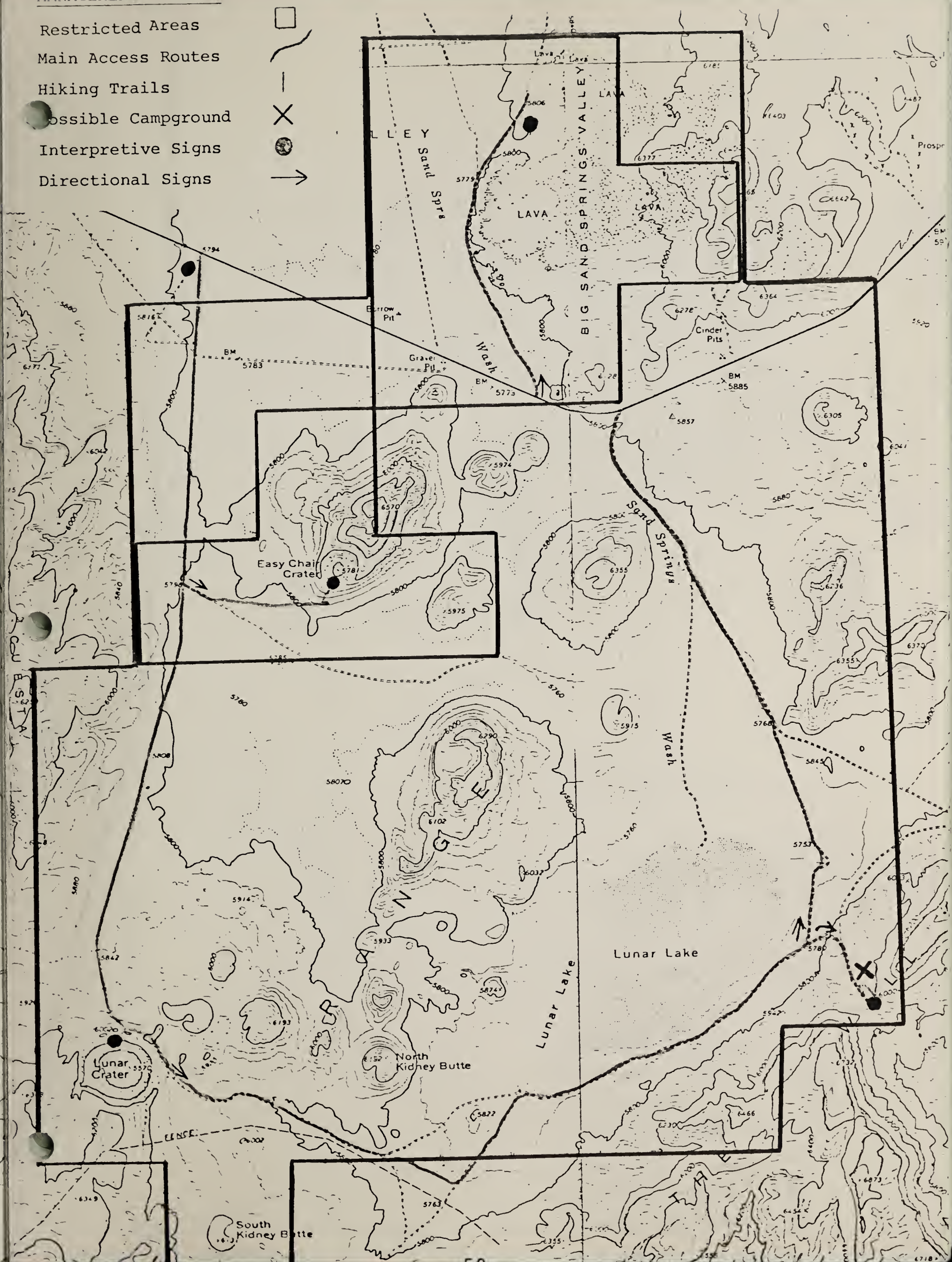
Main Access Routes

Hiking Trails

Possible Campground

Interpretive Signs

Directional Signs



Easy Chair Crater

MANAGEMENT ACTIONS

Main Access Route

Parking Area

Directional Signs

Hiking Trail

Interpretive Signs

Possible Campground

N

EASY CHAIR
CRATER

visitor roster box

interpretive sign

hiking trail with switchbacks not to exceed 5–7% slope

stone barrier to prevent ORV use

parking area

to the Lunar Crater Road

Developments at Easy Chair Crater

Lunar Crater

South Kidney Butte

MANAGEMENT ACTIONS

Main Access Route

Parking Area

Directional Signs

Hiking Trail

Interpretive Signs

Possible Campground

LUNAR CRATER

N

visitor roster box

new interpretive sign

foot path

to The Wall

directional sign

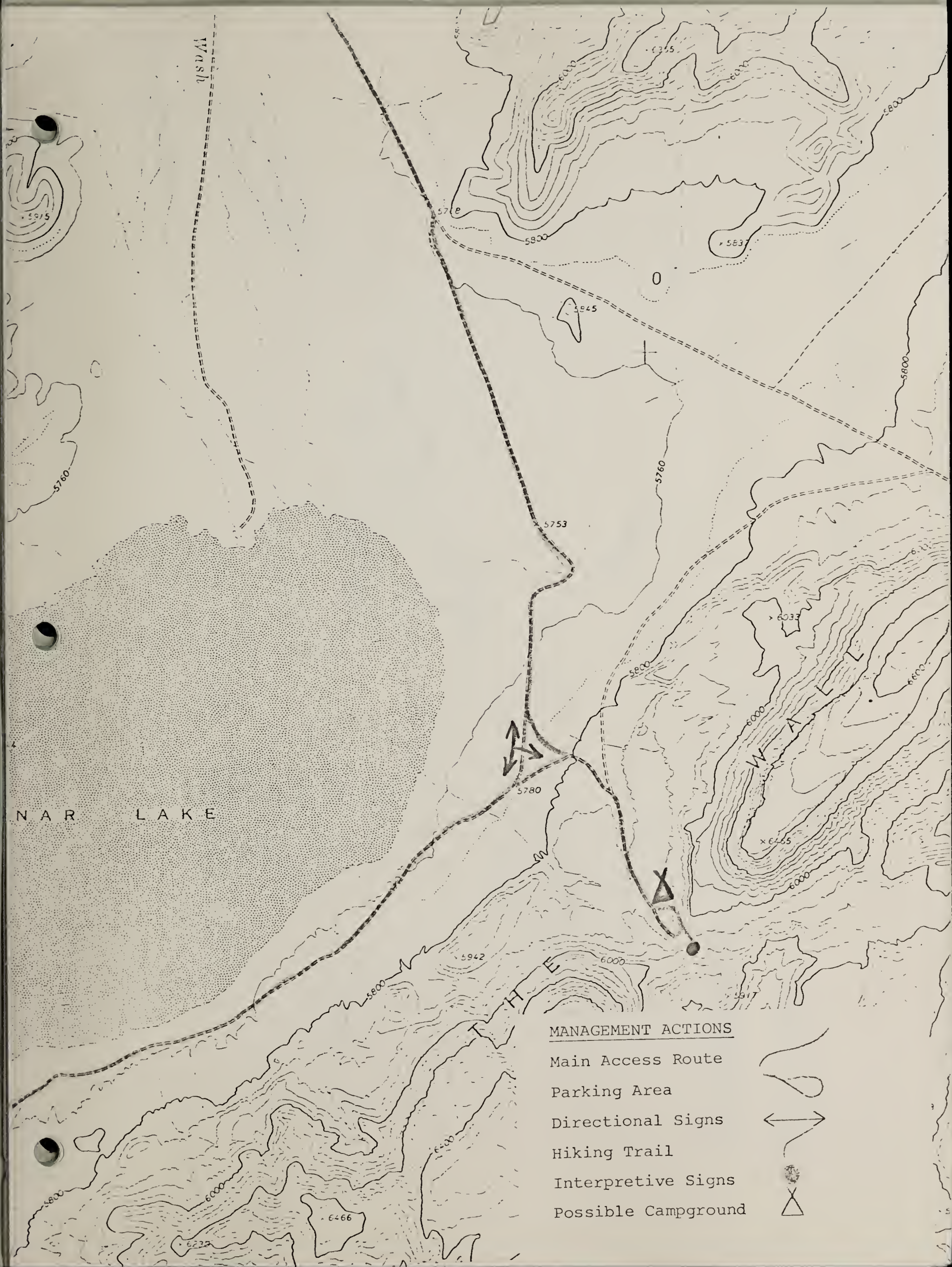
parking area will require cut/fill ±4'

stone barrier to prevent ORV use and discontinue current traffic

to Highway 6

Developments at Lunar Crater

Location of LUNAR
CRATER parking area


Wash
5915
5760
5753
5780
5942
6466
6232
NAR LAKE
5760
5800
6000
6033
6465
5845
5837
5941
WALLE
THE
MANAGEMENT ACTIONS
Main Access Route
Parking Area
Directional Signs
Hiking Trail
Interpretive Signs
Possible Campground

N

THE WALL

interpretive sign

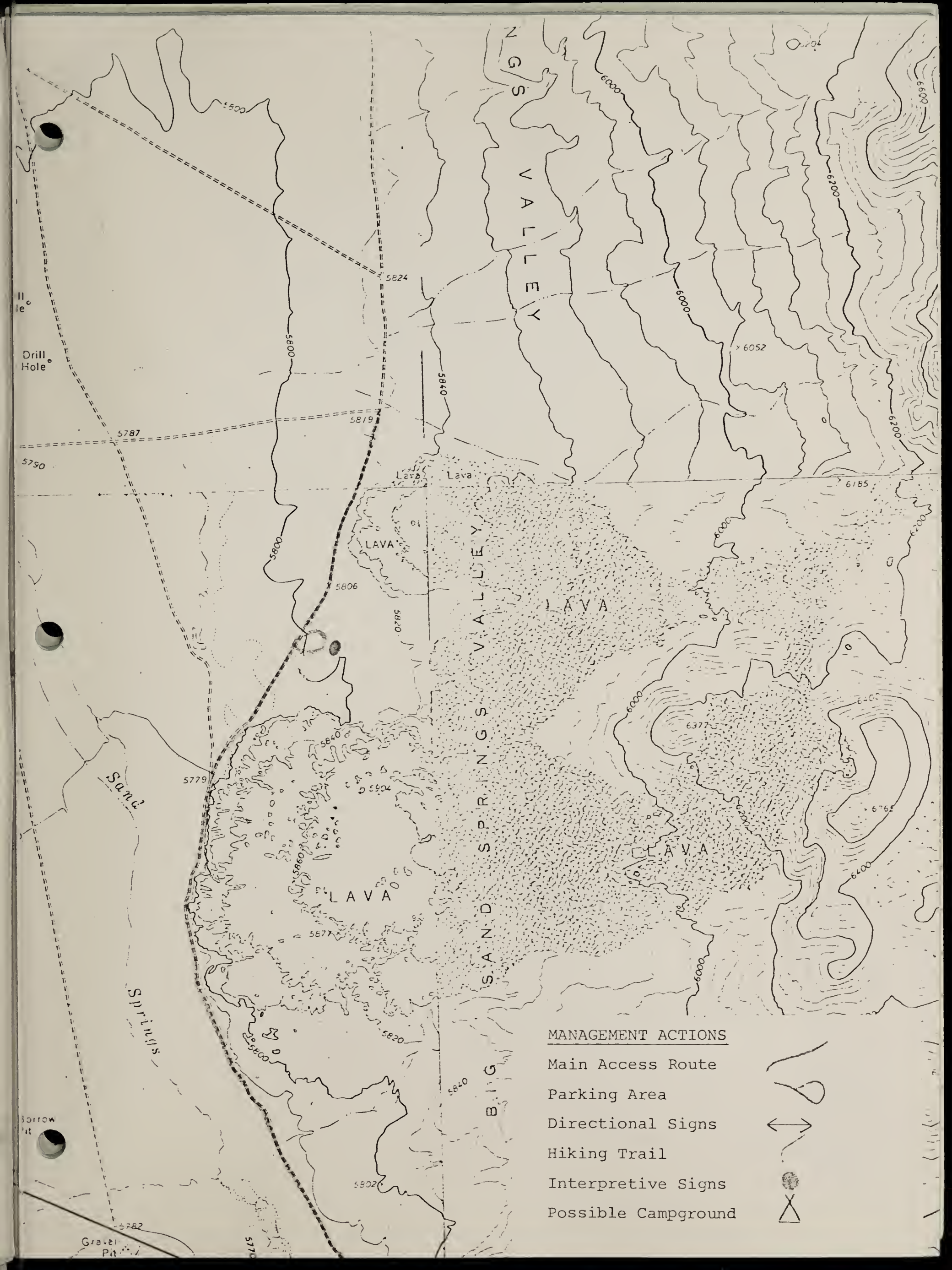
visitor roster box

hiking trail with switchbacks not to exceed 5-7% slope

parking area

Developments at The Wall

stone barriers to discontinue current road use


N. G. S. VALLEY
S. A. N. D. S. P. R. I. N. G. S. V. A. L. L. E. Y.
B. I. G.
LAVA
Lava
Lava
Drill Hole
Sand Springs
Borrow Pit
Gravel Pit
5800
5824
5787
5819
5790
5840
5806
5820
5779
5860
5877
5902
5782
6000
6200
6600
6052
6185
6377
6765
6400
MANAGEMENT ACTIONS
Main Access Route
Parking Area
Directional Signs
Hiking Trail
Interpretive Signs
Possible Campground

N

BLACK ROCK
LAVA FLOW

interpretive sign

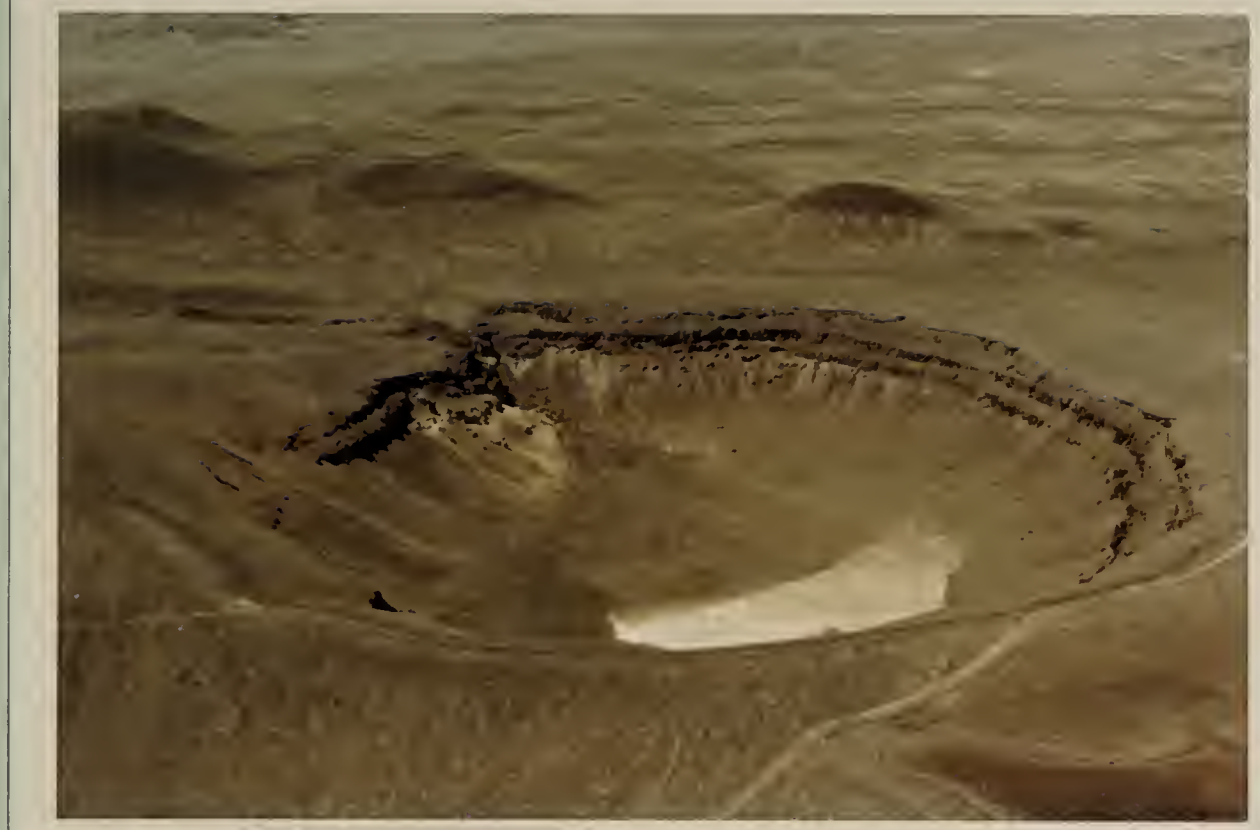
visitor roster box

parking area

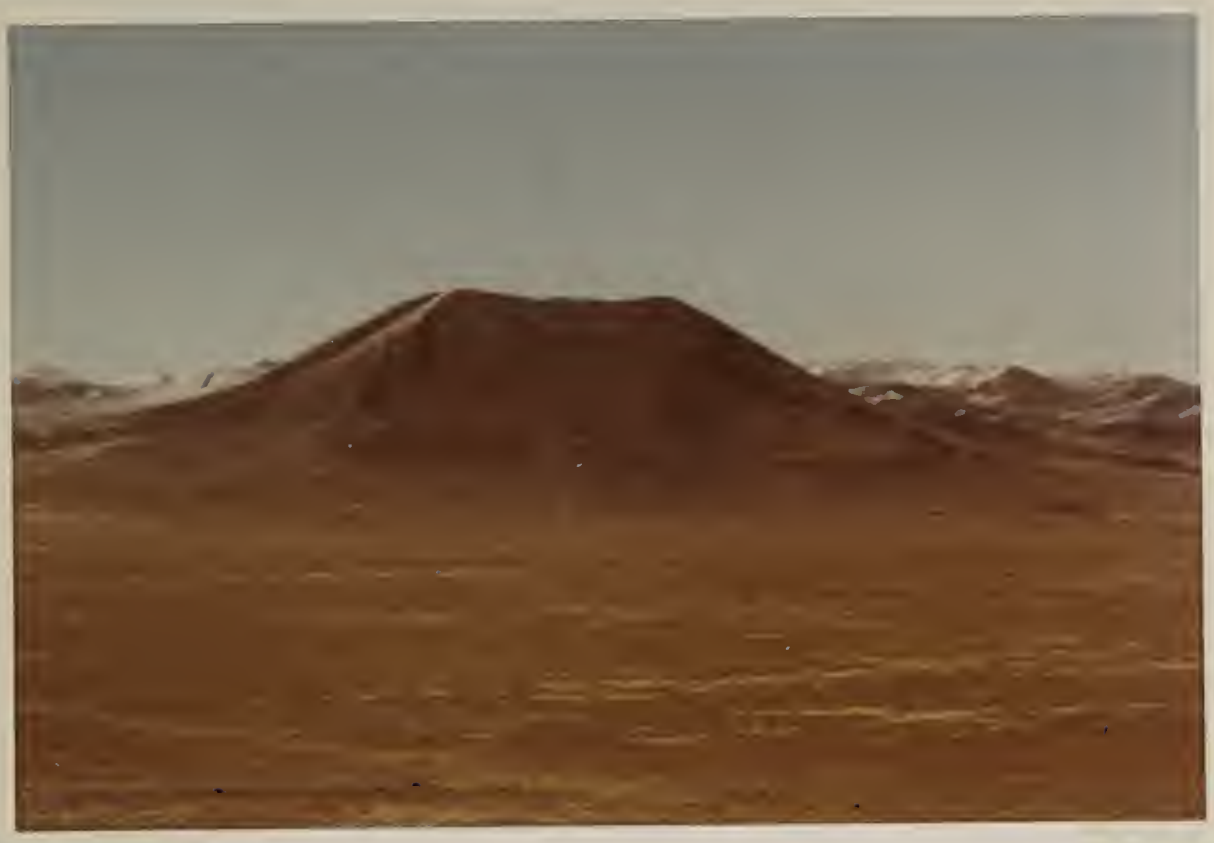
to Highway 6

Developments at Black Rock Lava Flow

D. Maps and Photos

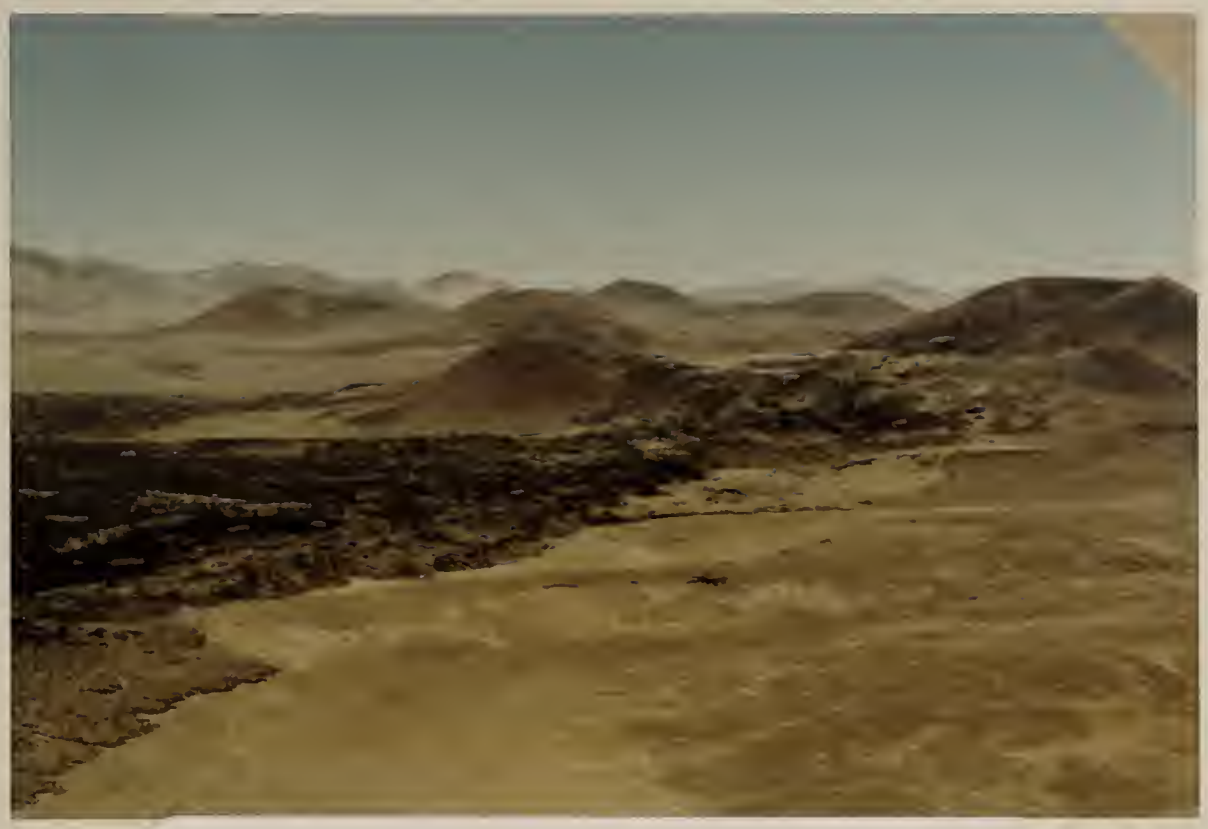


An Aerial View of
LUNAR CRATER
looking northwest



An Aerial View of
EASY CHAIR CRATER
looking north

THE WALL as viewed from the interpretive sign location.



An Aerial View of
BLACK ROCK LAVA FLOW

BLACK ROCK LAVA FLOW

Morey Peak is visable from most locations within the Volcanic field - such as here from the BLACK ROCK LAVA FLOW.

LUNAR LAKE, the back side of EASY CHAIR CRATER and Morey Peak as viewed from the location of the interpretive sign at THE WALL.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BATTLE MOUNTAIN DISTRICT

VISITOR REGISTER

DATE	NAME	CITY, STATE	NUMBER IN PARTY	COMMENTS
30/77	Dorothy Mason/ Diane Clifford	Tonopah, NV	2	out to see the Crater,
1977	P. Fieber	Den. Colo.	1	well worth the Drive up
/77	Doris + Larry Willsong	Los Angeles, Ca	2	outstanding
/77	Ruth + Frances Smith	Tiston, Wash	2	
1/77	Rich Goldfarb	SF, SF	2	No uranium
/77	M. Schank	Wendell, Id.	1	Impressive
/77	Bob Cones	Hardrock Idaho	5	Not so impressive
2/77	BEECHLAND	GUINAS WASH	1	ALRIGHT
4/77	Wayne Place	LV Nevada	2	Nice
4/77	Barry Wheeler	LV Nevada	2	Good
/77	Barbara/Jurgen Steiert	West Germany	2	amazing!
/77	Dan Kosa	Sun City Ariz	1	
/77	Jerry Hanlin	Bakersfield	3	OK.
/77	[illegible]	Rock Springs Wyo	1	
/77	Jan Miller	Newport Beach, Ca	2	Great!
/77	Lou Pitt	" " "	2	O.K.
/77	R.N. KRANOVICH	Ely, Nev	4	interesting !!!
/77	Jerry Louis Krainik	Nampa, Idaho	2	
/77	Liz Middleton	Pocatello, Ind	2	Neat
7-77	Jay Terry	Ely Nev	5	Beautiful area

PLEASE BE CAREFUL WITH ALL FIRES

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BATTLE MOUNTAIN DISTRICT

VISITOR REGISTER

DATE	NAME	CITY, STATE	NUMBER IN PARTY	COMMENTS
3/77	KEN VAN KOUGHNET	KASLO, BC. CANADA		HELLO FELLOW CANUCKS
3/77	CHELSEA SIMONSON	FRANCIS UTAH	2	Not bad for a crater!
6/77	MICHAEL LLODEN	TUCSON ARIZONA		
6/77	Jaqualin Walenmann	Zurich Switzerland	2	
17-77	Bill Wilson	Ely Nev	11	Nice, take some more!
7/77	J. HAYES	ELY	6	NICE ENGINEERING
17/77	W. LUJAN	ELY	1	IMPRESSIVE
1/77	Mike Fuell	Ely, NV.		Fantastico
7/77	D. Hatch	Ely Nev	1	alright!
7/77	WM. INGRAM	ELY	1	Nice
-78	Kevin Hernandez	Winslow Ariz	5	great
-78	Mary Maynard Bisoni	Eureka Nevada	6	DRS what a hike
78	I. GARCIA	NAVARRA, SPAIN	1	Buen Tiempo
-78	Bisoni Gerber Snider	Eureka Nev	3	Hi
-78	Mr+Mrs Randy Rinaldi	Tarzana, CA.	2	Good example of positive distribution
-78	Kat Atkinson	SLC, UT	2	
7-	Dan Tobin	Pequot Lks	3	Beautiful country
78	picked up			

PLEASE BE CAREFUL WITH ALL FIRES

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BATTLE MOUNTAIN DISTRICT

VISITOR REGISTER

DATE	NAME	CITY, STATE	NUMBER IN PARTY	COMMENTS
5/78	Dorothy Mader Kurt Ballentyne	Tonopah, Nevada	2	came out to see the crater
26/78	TOM SWIFT		3	LARGE HOLE
29/78	DORIS CLIFFORD	Tonopah, NEV.	3	VERY INTERESTING
2/78	John + Shirley Szczech	Tonopah, Nev.	3	No Cigarettes
1/78	Dorothy Mason Bruce Gienger	Battle Mtn NV	2	
78	Mr. Christensen	Layton Utah	4	Wow!
78	Rose Christensen	" "	"	"
8-7	Mason Lenton	Battle Mtn	2	Nice
27-78	Max Phelps	Waverly Ia	6	Very Pretty
27-78	Lee Adams	Waverly, Iowa	6	Awful dam big
27-78	Ronald Hayek	Fort Atkinson, Iowa	6	Hi
27-78	MACK MEJACK	FREEMAN, IA.	6	Nice
"	DAVE LENSING	" "	6	Interesting
"	Jim Rice	Waverly Ia	6	Different
2-78	Judy Moore Wanda Owens	L.A., Calif.	2	Would like to take one in it.
3-78	picked up			

PLEASE BE CAREFUL WITH ALL FIRES

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